disposed at a position that corresponds to the shaft portion **19**, that is, nearer to an outer circumferential side than a central position of a radial width of the back yoke portion **18***a*.

**[0049]** The core segments **16** are produced by stacking a plurality of first core laminations **17** and second core segments **18** alternately and fixing the first and second core laminations **17** and **18** to each other using the punch-crimped portions **17***c* and **18***c*. Thus, the back yoke portions **17***a* and **18***a* are laminated and integrated to constitute circular arc-shaped back yoke portions **16***a*, and the magnetic pole tooth portions **17***b* and **18***b* are laminated and integrated to constitute the magnetic pole teeth **16***b*. In addition, the tooth main portions **17***b***1** and **18***b***1** are laminated and integrated to constitute tooth main portions **16***b***1**, the width reduced portions **17***b***2** and **18***b***2** are laminated and integrated to constitute width reduced portions **16***b***2**, and the width expanded portions **17***b***3** and **18***b***3** are laminated and integrated to constitute width expanded portions **16***b***3**. The shaft portions **19**, as shown in FIG. **7**, are stacked together in the direction of lamination of the first and second core laminations **17** and **18** such that central axes are aligned. The interfitting apertures **20** are stacked together in the direction of lamination of the first and second core laminations **17** and **18** such that aperture shapes are aligned.

**[0050]** As shown in FIGS. **5** and **6**, in a direction that is perpendicular to a longitudinal direction (a direction of protrusion) of the magnetic pole tooth portions **18***b*, in other words, a plane that is perpendicular to a central axis of a shaft **3** of the rotary electric machine **100**, the interfitting apertures **20** include: a first interfitting aperture **20***a* and a second interfitting aperture **20** that are spaced apart in a direction that is perpendicular (approximately perpendicular) to a center line that passes through the central axis of the shaft **3** and a center of the magnetic pole teeth **16***b* in a width direction; and a linking aperture **20***c* that links the first interfitting aperture **20***a* and the second interfitting aperture **20***b*. A spring portion **21** is disposed on an outer circumferential side of the interfitting aperture **20** by forming a penetrating aperture on the back yoke portion **18***a* on the outer circumferential side of the interfitting aperture **20**. A protruding portion **21***a* that positions the shaft portion **19** in either the first interfitting aperture **20***a* or the second interfitting aperture **20***b* is disposed on the spring portion **21** so as to protrude toward the linking aperture **20***c*.

**[0051]** Thus, as shown in FIG. **5**, spacing between two core segments **16** is reduced by fitting the shaft portion **19** into the second interfitting aperture **20***b*. As shown in FIG. **6**, the spacing between the two core segments **16** is expanded by fitting the shaft portion **19** into the first interfitting aperture **20***a*. When a separating force acts on the two core segments **16** in FIG. **5**, motive force acts through the shaft portion **19** so as to push the protruding portion **21***a* upward, deforming the spring portion **21** elastically. The shaft portion **19** thereby moves through the linking aperture **20***c* toward the first interfitting aperture **20***a*. The spring portion **21** recovers once the shaft portion **19** has passed the protruding portion **21***a*. Thus, the force of recovery of the spring portion **21** acts on the shaft portion **19** by means of the protruding portion **21***a* such that the shaft portion **19** is pushed into the first interfitting aperture **20***a*, and is fitted together with the first interfitting aperture **20***a*. The spring portion **21** also deforms elastically in a similar manner during movement of the shaft portion **19** from the first interfitting aperture **20***a* to the second interfitting aperture **20***b*.

**[0052]** Thus, a force that elastically deforms the spring portion **21** is required when displacing the core segments **16** between a contracted position and an expanded position. The shaft portion **19** is thereby positioned in the first interfitting aperture **20***a* or the second interfitting aperture **20***b* by the spring portion **21**. Furthermore, because the central axes of the shaft portions **19** of the stacked first core laminations **17** are aligned in the direction of lamination of the first and second core laminations **17** and **18**, the core segments **16** are pivotable around the shaft portions **19**.

**[0053]** The core segment linked bodies **15** are configured by linking six core segments **16** consecutively so as to be pivotable around the shaft portions **19** by fitting the shaft portion **19** of one core segment **16** into the interfitting aperture **20** of another core segment **16**. As shown in FIG. **3**, the six core segments **16** are opened out rectilinearly such that the magnetic pole teeth **16***b* are mutually parallel (a contracted position) by fitting the shaft portions **19** into the second interfitting apertures **20***b*. Furthermore, as shown in FIG. **4**, the six core segments **16** are opened out rectilinearly such that the magnetic pole teeth **16***b* are mutually parallel at a pitch of $\tau s'$ (the expanded position) by fitting the shaft portions **19** into the first interfitting apertures **20***a*. Thus, the spacing between adjacent magnetic pole teeth **16***b* of the core segment linked bodies **15** are expandable and contractible between Ls and (Ls+$\delta$). Moreover, $\tau s'$ is a spacing between center lines A that pass through centers in the width direction of the adjacent magnetic pole teeth **16***b* that are positioned in the expanded position.

**[0054]** Next, a manufacturing method for an armature will be explained with reference to FIGS. **10** through **14**. FIG. **10** is a plan that explains materials yield of core laminations in the rotary electric machine according to Embodiment 1 of the present invention, FIG. **11** is a diagram that explains a manufacturing method for core segment linked bodies according to Embodiment 1 of the present invention, FIG. **12** is a plan that shows core segment linked bodies that have been manufactured according to the manufacturing method for core segment linked bodies according to Embodiment 1 of the present invention, FIG. **13** is a plan that explains a manufacturing method for the armature segment according to Embodiment 1 of the present invention, and FIG. **14** is a plan that explains a step of bending the armature segment according to Embodiment 1 of the present invention into a circular arc shape.

**[0055]** First, the materials yield of the first and second core laminations **17** and **18** will be explained with reference to FIG. **10**.

**[0056]** Two first core lamination groups in which six first core laminations **17** are arranged rectilinearly in a single row at a pitch of $n\tau s'$ in the longitudinal direction of the back yoke portions **17***a* such that the magnetic pole tooth portions **17***b* are parallel form an arrangement known as a "staggered straight row pair" in which the magnetic pole tooth portions **17***b* of one first core lamination group are disposed in a reverse direction so as to be inserted between the magnetic pole tooth portions **17***b* of the other first core lamination group, and are punched out of a strip **25** of electromagnetic steel sheet, etc. Moreover, first longitudinal end portions of the back yoke portions **17***a* of the first core laminations **17** that are positioned at the first ends of the first core lamina-